

DISEASES *of the* CHEST

Published Monthly by the Federation of American Sanatoria

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GENERAL CONSIDERATIONS

"FIRST of all remember that the diagnosis of tuberculosis is not a sentence of death as it was supposed to be thirty or more years ago. The evidence of disease in early cases often completely disappears, and under modern treatment more advanced cases can be restored to health and work.

Secondly, remember that the atmosphere of the building in which you are living depends on the attitude of the individuals therein. Do not bore your neighbors with repeated discussion of your symptoms. Don't frighten a new patient with gloomy or terrifying predictions. Don't isolate yourself from your neighbors. Solitude is apt to have the effect of magnifying our of all proportion minor irritations."

*An extract from "On Getting Well" a Booklet given to all Patients
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Vol. II

February, 1936

No. 2

DISEASES

OF THE

CHEST

Official Organ of the Federation of American Sanatoria
Editorial offices 1018 Mills Building, El Paso, Texas
Business Address Cotton at Wyoming, El Paso, Texas

(A MONTHLY PUBLICATION)

"The most important factor in diagnosis in the majority of cases of pulmonary tuberculosis is keeping the disease in mind."

Lawrason Brown, M. D.

Editorial Comment

To Our New Readers THIS ISSUE of the DISEASES OF THE CHEST publication will come to many readers

for the first time. The journal is now completing its first year in the field of medical sciences. It is the aim and purpose of the editorial staff of DISEASES OF THE CHEST to bring to the busy physician short, concise articles on chest diseases written by specialists with long training in this branch of medicine.

The editorial policy of DISEASES OF THE CHEST is, *first*, the early diagnosis of chest diseases and, *second*, segregation of the open case of tuberculosis.

Our Motto: "CLOSE THAT CAVITY!"

You will find a special subscription offer on the back inside pages of this journal.

M.K.

The Field of Chest Diseases A FEW BRIEF YEARS have brought about a great transition in industrial medicine. Surgery for the injured was formerly the only interest taken in the health of the employed. Today industry's greatest interest is in tuberculosis and silicosis, diseases undermining the health and efficiency of employees. It cannot be too strongly emphasized that the study and treatment of pulmonary diseases constitute a true specialty of internal medicine. Internists have always been prompt

to recognize surgical conditions and refer such cases to surgeons, and in large medical staffs to have surgeons available for that department of service. Surgeons who head the medical staffs of great corporations should be as quick to recognize the value of specially trained men for the diagnosis and treatment of pulmonary diseases. It is an insufficient service for the physician handling pulmonary cases to be able to read an x-ray film of the chest. Trained Phthisiologists, or Chest Specialists, should be retained on all medical staffs of great corporations, to make the necessary clinical, pathological, etiological and economic researches.

O.E.E.

Group Insurance IF GROUP INSURANCE is carried by an industry for its employees a compensation policy for sufferers from silicosis is as practical as it is for other diseases and for injuries. To the extent there is disability in silicosis, it is permanent, and the disease is not amenable to treatment.

Tuberculosis is a much more complicated situation. The disease in its minimal, moderately advanced and many cases from the far advanced group is amenable to treatment and may not result in total disability, but only partial. If treatment can prevent serious permanent disability it is greatly to the interest of the patient, to

the industry purchasing group insurance, and to the Insurance Company itself, that treatment of tuberculosis be a feature of the policy. Experience has proved that compensation to the sufferer from tuberculosis, even though adequate, is not always used to the best advantage by the patient himself for the treatment of his disease and his temporary disability may, through such neglect, become a permanent one. The policy should, therefore, provide for hospital treatment of tuberculosis for at least one year before a permanent rating is given and the case placed on compensation status only. O.E.E.

Our Kansas City Meeting WE HAVE recently received the following letter which is of great interest to all members of the FEDERATION OF AMERICAN SANATORIA.

"I am glad to inform you that the council on the scientific assembly at its meeting held a few days ago in Chicago decided to have one session in the section on miscellaneous topics at the Kansas City Session of the American Medical Association for the purpose of a program dealing with tuberculosis."

OLIN WEST, M. D.,
Sec'y and Gen'l Mgr.
American Medical Assn.

This makes it possible for the Federation of American Sanatoria to meet at the same time as the American Medical Association and to have a place on the program. It is the sincere hope of all of us that, eventually, a section on Diseases of the Chest will be permanently established by the American Medical Association.

The importance of a continued educational program, especially for the medical profession at large, on Diseases of the Chest, with special reference to tuberculosis, is being recognized more and more by men who have chosen Diseases of the Chest as a speciality. It being our purpose to carry on such a campaign we therefore greatly appreciate the fine spirit of co-operation on the part of the

officials of the American Medical Association as is evidenced by the above communication. C.M.H.

Cost of Hospitalization of the Tuberculous IN THE STUDY carried on by Doctor Frijof H. Arestad and which was published in the A. M. A. journal of December 7th, 1935, he discusses the daily per capita cost as gathered from the reports from 410 sanatoria, 89 tuberculous departments and 15 preventoria. The average daily cost per capita are given as follows:

Veterans Bureau Hospitals	\$3.98
Other Federal Hospitals	3.66
State Sanatoria	2.01
County Sanatoria	2.10
City Sanatoria	2.04
Private Sanatoria	2.94

From the above figures it is easily noticeable that of the tax-free sanatoria, the Federal Hospitals are the most expensive to operate. The next most expensive are the County sanatoria, the third most expensive are the City sanatoria, and the least expensive are the State sanatoria.

Although the private sanatoria ranks third in the cost per capita per diem, it must be remembered that the Federal, State, County and City costs are for actual operation and do not have taxes, depreciation and interest on investment and insurance. While the private sanatoria have all these extra costs to meet besides the cost of actual operation.

From the above figures one can see the position in which private sanatoria are placed, when it is considered that they are paying taxes for the upkeep of competitive tax-supported institutions, that are in many instances much more expensive to operate than the private sanatoria.

In the great majority of instances these private sanatoria are paying taxes on empty beds, while nearly all tax-supported sanatoria have waiting lists. We feel that when the medical profession fully realizes this situation, steps may be taken to correct this mal-adjustment between the tax-supported and the tax-paying sanatoria.

C. M. H.

The Tuberculous Negro

IN AN ARTICLE in this issue, Dr. M. A. Thomas, a colored physician in Atlanta, Georgia, brings home to us rather forcibly the plight of our Southern Negro population. What he writes concerning his people in Atlanta is true to a large extent throughout our Southern States. The tuberculosis death rate in the Negro race in this section far exceeds that of the white population—often in a ratio of 4 or 5 to 1.

Indeed, tuberculosis ranked seventh as a cause of death among the white population and second among the Negroes in the south in 1934. The actual incidence of the disease among these people can not be accurately estimated.

There must be some cause for this wide variation, and it appears that Dr. Thomas has called our attention to the most important factor when he points out that there are relatively few hospitals or sanatorium beds available for the colored population. This not only means that the tuberculous Negro is not given the benefit of proper care, but, and equally important, the open case is not segregated as he would be were sanatorium beds available. There is undoubtedly some virtue in educational activities among these people but education will only scratch the surface, without facilities to carry out proper treatment and without the segregation or isolation of a larger number of the open cases.

There is considerable controversy regarding a possible greater susceptibility of the colored race to tuberculosis. The Tuberculosis League of Pittsburgh in an extensive report, "Tuberculosis and the Negro in Pittsburgh, (1934)", revealed that the tuberculosis death rate in 1933 for Pittsburgh Negroes was 247.3 per 100,000 population as compared to 40.9 for white persons. The report states: "The degree of admixture of Negro blood seems to be an unimportant factor in the tuberculosis rate as the incidence of disease varied but slightly in light or dark negroes". And further, "In any population group, regardless of race, where poverty is associated with over-crowding, lack of

privacy, lack of sunshine and ventilation, and ignorance of the laws of hygiene, a high rate of tuberculosis may be expected. The high rate revealed in the local Negro is therefore not surprising. Nor is it to be wondered at that 17.5 percent of the children under five reacted to the tuberculin test; that almost half of the infected children under ten showed evidence of disease; and that the rate of adult tuberculosis in children under fifteen was exceedingly high (3.3 percent). Because of the high rate of infection and disease disclosed in the children, especial consideration of their needs is warranted if the prevalence of tuberculosis is to be lowered in the oncoming generation. Contact between the open case and the child must be broken. The ideal means to this end is the hospitalization of the open case".

R. B. H., JR.

Oral Hygiene

ON PAGE 20 appears an article entitled "The Importance of Mouth Hygiene in the Treatment of Chest Diseases." This is an important subject and should be studied by all of our readers. No examination of a patient, regardless of what the diagnosis may be in the end, is complete without a thorough study of the teeth and gums. Not a few abscesses of the lungs can be traced directly to mouth infection, dental caries or the inhalation of small loosened fillings. In the treatment of pulmonary tuberculosis, thorough dental examinations and care may be the important link between success and failure of the patient to respond to the usual academic method of treatment. We cannot emphasize too strongly the importance of oral hygiene under any circumstance, and especially, in the diagnosis and treatment of Diseases of the Chest.

C. M. H.

SKIN TESTS for tuberculosis are of no value clinically unless the positive reactors are subjected to x-ray examinations. The positive tests merely indicates tuberculosis infection, the x-ray finds or eliminates active disease.

Modern Methods of Diagnosis and Treatment In Pulmonary Tuberculosis*

THIS EVENING I am going to call your attention to some very practical points in

the recognition of pulmonary tuberculosis, and in the selection of appropriate methods of treatment. Most practitioners consider the diagnosis of the early stages of this disease as difficult and requiring a specialized training. This is hardly true, because the early diagnosis in the large proportion of patients can be easily made if the physician will give a little time to the problem and remember a few diagnostic points.

Cough.—Primarily, the diagnosis depends upon us being ever suspicious and watchful of a chronic pulmonary lesion, and upon the care which we use in taking the history. It is a safe rule to be strongly suspicious of tuberculosis in any patient that has a "cold in the chest" or a *cough lasting 5 weeks or longer*. Chronic bronchitis is not a disease entity, but is symptomatic of some underlying condition (pathological), such as bronchiectasis, abscess, malignancy, or, as it is more commonly, Tuberculosis. I believe that we are never justified in making a diagnosis of Chronic Bronchitis. While on the subject of history, let me stress the importance of three other cardinal symptoms:

Fatigue.—(1) *Fatigue* or the sensation of lack of endurance. The patient will frequently complain that he feels lazy or that he is unable to carry on with his usual daily work with ease. The patient then makes the mistake of not coming to his doctor immediately, but instead, tries to force himself to still greater efforts.

Pleurisy.—(2) Past history of *Pleurisy* is indicative of tuberculous infection in 90% of cases where no definite cause has been found. This, of course, excludes such causes as fractured ribs, pneumonia, ma-

BY

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lignancy and abscess.

Hemoptysis.—(3)

Blood spitting, especially when it is of

fluid dram, 1 or more. Unfortunately patients are often told that this blood is coming from a broken blood vessel in the throat, and the serious significance of the hemoptysis is lost.

Percent of Cardinal Signs.—In a study of 300 cases of minimal Tuberculosis, the incidence of the five cardinal signs was found as follows: 27% had rales, x-ray evidence was present in 99%, hemoptysis as frequent as the rales, namely 27%, while the sputum was positive for tubercle bacilli in 35% of cases, and there was a history of pleural effusion in 12%.

X-ray and Physical Examination.—Up to within recent years great importance was placed on the physical examination of the chest, and still is by many physicians. I must confess that valuable as is the physical examination, yet, I place more confidence upon a carefully taken history and a good x-ray picture. Unfortunately, x-ray films may be of poor quality, and therefore, of difficult interpretation, but a properly exposed picture will reveal tuberculosis lesions long before rales can be heard by the stethoscope. This superiority of the x-ray over the physical examination has been strikingly brought out in a comparison of the physical findings, and the x-rays of 1,000 patients having tuberculosis. There were none of these that had definite physical findings, but did not have x-ray evidence. In 200 of them the extent of the disease was present by x-ray, but the physical signs were normal. In other words, 400 cases would have been missed had not an x-ray been taken. In another study, made at the Trudeau Sanatorium, of 500 patients with cavities in their lungs as shown by the x-ray, the physical signs, as indicating a cavity were present in only 5%. These figures are startling in their

*An address delivered to Luzerne County Medical Society (Pennsylvania) September 18, 1935.

demonstration of the inadequacy of physical signs.

Sputum.—Many physicians depend upon the sputum examination for their diagnosis. Unfortunately, by the time a patient has developed a positive sputum, he has advanced to open ulceration of his lungs. There are, indeed, many times that the diagnosis is puzzling, and the sputum examination is required to make a differential diagnosis certain. In the vast majority of patients, however, it is not necessary to depend upon the sputum, and this examination should be used only to confirm a diagnosis that has already been made. Strange to say, a positive sputum is of more importance in evaluating the treatment than it usually is in diagnosis. This point will be discussed shortly.

Summary Diagnosis.—Lawrason Brown's advice on the matter of diagnosis is most appropriate: "The most important factor in diagnosis in the majority of cases of pulmonary tuberculosis is keeping the disease in mind." A combination of any one of the following, is sufficient to make a tentative diagnosis of the disease: (a) History of Pleurisy, (b) History of unexplained hemoptysis, (c) History of cough lasting 5 weeks or longer (d) Persistent rales heard after expiratory cough above the level of the second rib, anteriorly, or above the level of the fifth dorsal vertebra, posteriorly, (e) Evidence on the x-ray film of pulmonary pathology above the second rib, anteriorly, or the fifth dorsal vertebra, posteriorly. A combination of any two will make a definite diagnosis.

Treatment of Hemoptysis.—The treatment requires much more care and study than does the diagnosis. This fact is not generally appreciated because many physicians consider that the only treatment is largely in keeping the patient quiet, and giving him varying quantities of cod liver oil and cough mixtures. That may have been true 20 years ago, but tuberculous patients deserve modern methods of treatment just as do diabetic patients. Even in the treatment of Symptoms, we are chang-

ing our methods. For example, we never give morphine in the treatment of hemoptysis. The first effect of morphine is to abolish the cough reflex, and though the bleeding may (and usually does) continue, yet, it is not expectorated, and flows into healthy parts of the lung. Almost invariably, this blood carries with it tubercle bacilli, and we have a subsequent spread causing either a mild or severe tuberculous pneumonia. I have seen patients drown in their own blood because they had been given morphine or codeine. If the patient is restless or frightened, one of the Barbituric acid derivatives is all that is necessary to control his fears. Morphine and codeine have no memostatic action of their own. Nearly all hemoptysis will stop of their own accord, and the only reliable method of controlling the bleeding is by pneumothorax.

Calcium therapy.—The use of Calcium, Parathyroid Hormone and hemostatic serum, have been given up as useless. The routine use of calcium in tuberculosis has also been dropped because we believe that tuberculous patients do not suffer from a hypocalcinaemia but that they have a normal supply and further, that calcification of a lesion will not occur for some years after the lesion is healed. The lesion must be thoroughly fibrosed before calcification will take place.

Cough.—The cough is one of the minor symptoms that we are called upon to treat. We use codeine liberally to check an unproductive cough, but never a productive cough. Severe paroxysms of coughing require good doses of codeine because the paroxysms are not only exhausting to the patient, but they frequently cause, by their mechanical hammering on the stomach, vomiting. This is itself too hard on an already undernourished patient.

The symptomatic care is simple, but it should not cause us to forget the basic principles in the treatment of this disease. These are, *Rest, Nourishment, and Time.* *Fresh air* is often included but, while necessary, it is not as important as the other three. In the past, far too much importance

was placed on Fresh Air, so much so, that people considered that it alone would cure them. I have seen quite a number of tragedies caused by the patient being advised by some one to get out into the country for a few months, and get plenty of Fresh Air. The result was that the patient did not observe the fundamental laws of Rest, Nourishment, and Time, and, instead went for walks in the country or played golf. This is about the quickest way to cause the disease to advance.

Time.—I think that we do not sufficiently realize the importance of the factor of time in the treatment of tuberculosis. The more we treat this disease, the more do we recognize that we are not giving sufficiently length of time to its treatment. Years ago, it was said that Tuberculosis was a disease that was characterised by recrudescences. That was because we did not know that it takes at least a year to cure the smallest amount of tuberculosis, and rarely do we see a patient in this early stage. The physician's greatest difficulty in handling the patient is not when he is sick, because then he will follow the physician's instructions implicitly, but it is when he feels and looks well. When our patient is feeling like his old self, then, it is very difficult to convince him that a slight amount of exercise will break down the delicate defense that he has so slowly built up.

The modern method of treatment is best exemplified in the many ingenious ways that have been devised to give artificial rest to the diseased lung. We realize that a localized rest to the lung greatly decreases the tuberculous toxemia, and aids in the healing of the cavities. A collapse of this diseased portion of the lung, with its subsequent immobility, has three distinct effects.

Circulation.—(1) A decrease in the circulation of the part, and which, therefore, causes a decrease in the lymphatic drainage with lessened absorption of the tuberculous toxemia, and increase of fibrosis.

Anoxaemia.—(2) A relative anoxaemia, with increase of the CO₂ tension in the col-

lapsed pulmonary tissues. These two factors account for the almost miraculous improvement in patients who have had artificial rest. We can understand this by remembering that decrease of lymphatic drainage means decrease of tuberculous poisoning, and a decrease of oxygen with a corresponding increase of CO₂ tension renders the soil most unsuitable for the proliferation of the tubercle bacillus.

Closure of Cavities.—(3) While the above two factors are at work a third result occurs in a good collapse; that is, any cavities present are collapsed, and their walls approximated. In a short time this causes a disappearance of tubercle bacilli from the sputum. We regard a positive sputum as a very serious menace, a menace not only to those with whom the patient associates, but also to himself. Sputum that contains tubercle bacilli will invariably, in the course of time, cause a further spread, either in the same lung, or into the other healthy lung. We see so many patients who have had a bronchogenic spread from their own sputum, that we consider the *first requirement of tuberculosis therapy is to render the sputum free of tubercle bacilli*. It is also safe to say that the majority of patients who have a positive sputum have already advanced to the stage of cavity formation. It may be true that the cavity is very small, but erosion has taken place sufficiently to liberate tubercle bacilli. With these requirements in mind, let us consider the various applications of artificial rest and collapse therapy.

Pneumothorax.—First of all, we have the familiar artificial pneumothorax. This has come into wide use, and unfortunately, the risks and dangers of it are not generally realized. The technic is simple, but requires the utmost precision and thorough knowledge of tuberculosis. When air is insufflated into the pleural space, it tends to rise to the apex of the space in accordance. Fortunately, tuberculosis has a predilection for the apex, and thus there is a natural selection of the diseased area by the collapse. Various degrees of col-

lapse can be maintained sufficiently to close the cavities, and render the sputum free of tubercle bacilli. The recovery of the patient depends upon the degree of collapse obtained. It has been proven, without a doubt, that the more complete is the collapse, the lower is the ultimate death rate. For example, in a study of 600 patients in whom pneumothorax was attempted and, who were followed for a period of 5-10 years, it was found that those who had a satisfactory collapse, 58% were in good health, and 22% were dead at the end of this time. In the group that only had a partial collapse, there were 22% in good health at the end of that time, and 58% were dead. In the group in which pneumothorax was attempted, but was unsuccessful because of pleural adhesions obliterating the entire pleural space, 15% were alive, and in good health, and 70% were dead. These figures are a striking proof of the absolute necessity to give the lung some form of artificial rest. The chances of your patient being alive in five years is raised from 15% to 70%, if he receives some form of collapse. About 45% of our patients are able to receive pneumothorax treatment. It is evident that the success of the treatment depends upon its induction before pleural adhesions have formed, and should adhesions prevent a perfect collapse, these pleural adhesions must be severed.

I have mentioned that the air rises to the upper part of the pleural space, and so apparently selects for collapse that area that is diseased. In this way, by careful fluoroscopic control, one can maintain a collapse of the diseased area, and permit the healthy part of the lung to be expanded. In this manner, the vital lung capacity of the patient is not encroached upon to any great extent. If the vital capacity is more than 2500 cc. after the first pneumothorax, then we are justified in attempting a bilateral pneumothorax, should the patient have a bilateral lesion. Naturally, bilateral pneumothorax requires much more attention and skill than the usual unilateral type, and is subject to

more pleural adhesions. The great restriction to pneumothorax is the matter of pleural adhesions. This brings me to the recently developed operation of intra-pleural pneumolysis.

Intra-pleural Pneumolysis.—The operation is performed under local anaesthetic, and the adhesions are severed either by galvano-cautery, or the high frequency cutting current. The entire operation is done under the direct vision of the thoracoscope. The thoracoscope is a modification of the cystoscope, and enables the operator to have a clear vision of the interior of the pleural space. A second cannula is placed through the thorax a short distance from the thoracoscope, and in this cannula is passed the electrode. The adhesion is first coagulated to prevent hemorrhage, and then cut. It is now agreed that the high frequency current is much superior to the galvanic current, because of the less danger of hemorrhage and from the much fewer pleural complications such as effusions. Unfortunately, not all adhesions can be cut. About 30% of adhesions are of the "fold" type which contain lung tissue, and therefore cannot be cut. About 70% of adhesion operations are successful, the failures being due to these "fold" adhesions. Of these technical successful operations, it is said that about 85%, after four years, were working, and of those whose operations were only partly successful from a technical point of view, 50% were working. All of these patients have now a negative sputum. As I told you a moment ago, approximately 15% of pneumothorax patients who have an incomplete or unsatisfactory collapse, recover. By severing their adhesions, it may be possible to convert 70% of them into satisfactory collapses in which the recovery percentage is 60. The mortality rate from this operation in a series of over 300 patients was 1.5%.

Phrenic Nerve.—While pneumothorax is used in the large majority of attempts to collapse or rest the lung, yet, there are quite a number of other methods. Prob-

ably the one next in common use, is the paralysis of the phrenic nerve; either a temporary crush or an evulsion of the nerve on one or both sides. A paralysis of the diaphragm is indicated in a number of conditions, the most important of which is a *basal tuberculosis*. The rest and relaxation secured by this paralysis is very striking and a rise of about 2-3 inches may be expected. Many times in *pneumothorax treatment*, where diaphragmatic pleural adhesions prevent a sufficient relaxation of the lung to cause a closure of the cavity, then a rise of the diaphragm is necessary. The operation is also done sometime in the reexpansion of the lung after a pneumothorax treatment is discontinued. The reexpanding lung is often fibrous, and expands with difficulty. To prevent the healed lesions from being torn open in this reexpansion, it is often advisable to permit the diaphragm to rise and thus lessen the volume to which the lung must expand. The operation is performed under local anaesthesia, and a small incision 1" above the clavicle enables the operator to locate the phrenic nerve as it crosses the scalene muscle. The nerve is then either crushed for temporary paralysis, or evulsed for permanent results.

Somewhat similar to the phrenicectomy operation is the scalenotomy. This has not been practiced to any great extent although, the possibilities of it are great. The incision is made above the clavicle, and the Scaenius Anterior is located and severed. The other two scalene muscles are cut, and the leverage action of these muscles on the first and second ribs, abolished. The operation causes a reduction of the volume of the apex by 40%. The operation is applicable to those cases having small cavities located above the first rib. The operation is so simple, and causes the patient so little surgical shock, that it is having an increasing use in selected cases. In a series of 135 operations, in which scalenotomy alone, or combined with phrenicectomy, were performed, it was found that 35% of these

patients were rendered negative sputum.

Extrapleural Pneumolysis.—There is one type of operation that is not as well known as it should be, and if used more frequently, would be of immense help in restoring our tuberculous patients to normal health. This is the "Extrapleural Pneumolysis". In the contra-distinction to the intrapleural pneumolysis or adhesion cutting operation, this operation is done outside the pleura, and is known as the "Paraffine Operation". The purpose is to place a pad of paraffine between the parietal pleura, and the thoracic wall, and by so doing, we secure a localized compression of the lung. The patients selected for the operation are ones in which it is impossible to do a pneumothorax because of pleural adhesions. The incision is made either anteriorly or posteriorly, and a small portion of one rib is resected. The incision is carried down to the endothoracic fascia, where a blunt dissection is carried on, until a sufficient space has been obtained to insert a pad of a specially prepared paraffine, whose melting point is about 50 C. The dissection is carried on mostly over the area of the underlying cavity, and with the placing of the paraffine, the cavity is compressed, and closed. This operation has the advantage that it can be done on both sides in a bilateral case. The results show a large proportion of the patients are greatly benefited under this treatment.

Thoracoplasty.—Any discussion of artificial methods of collapse is not complete without a description of thoracoplasty. Thoracoplasty is essentially an operation whereby some or all of the ribs are removed, permitting a collapse of the thoracic wall, with a consequent collapse of the underlying lung. The success of the operation, like all other procedures of this type, depend upon the degree of the resulting lung collapse. The operation may be total in which all the ribs are involved, or partial, where only the ribs necessary to produce a localized collapse are removed. Up to within the last two years, it was the custom to remove portions of the

ribs, but the resulting collapses were usually insufficient, and too much surgery was done at one time. The mortality rates were, therefore, high, and the operation was considered formidable. This old type of operation is giving way to the newer one where the complete rib is removed from its articulation with the spine, to the junction with the cartilage. However, not more than four, and frequently only three ribs, are removed in one stage. In the operation, the periosteum is left in place and in the course of time, new ribs form in the new position of the chest wall, causing a permanent collapse of the lung. When more than one stage must be done, the upper three ribs are removed first, the periosteum touched with 10% formalin, so as to prevent too rapid bone formation, and an interval of three to four weeks given to allow the patient to recover thoroughly before doing the second stage. The operation is best done under cyclopropane and gas oxygen anaesthesia. This newer technic has resulted in a very much lower mortality rate, and a greatly improved collapse of the lung. So successful is it that mortality rates now vary from 5-10%, depending upon the operator. There are quite a number of reports in the literature of a bilateral partial thoracoplasty, the removal of a few ribs on each side, for bilateral cavities. The reports show that the results are very satisfactory.

Thoracoplasty is used in those patients in whom pleural adhesions prevent a pneumothorax therapy, and the results, when taking into consideration the low mortality rate, justify no hesitation in those patients who are reasonably good surgical risks. In this type of work it is highly necessary to have complete co-operation between the Tuberculous Specialist, and the Surgeon. This team work has caused the great advance in the past few years. In a series of 3,000 thoracoplasties by various operators, there was a death rate of 10%. Of these 3,000 patients, in a five to ten year follow-up, 35% were free of symptoms and working

and free of tubercle bacilli, and only 5% were made definitely worse by the operation. Incidentally, there were on record twenty-two women who have had this operation and later have borne children.

Continuance of Treatment.—With all these various forms of artificial rest, it is important to remember that while the lung is placed in a more favorable position to cure rapidly, the other factors necessary in the cure are not to be forgotten. This is a great mistake that is so often made, and disastrous results often follow neglect of this advice. It is particularly true of patients because they tend to place their entire reliance upon any special procedure and invariably start to work too soon. We see this is the tendency in physicians who advocate a return to work within three months or less, after pneumothorax has been induced. The question may then be fairly asked as to what guide we should follow in controlling the increase of exercise of these apparently normal patients. It has been our practice *not to permit any pneumothorax patient to return to work under one year after the induction of the treatment.* Tuberculosis is a very treacherous disease, and it is much safer to keep the patient resting a month or two longer than necessary than to take any chances of a breakdown. The average pneumothorax patient is usually able to do part time work in his second year of treatment, and full time in his third year. It is generally agreed that a lung should be kept collapsed for a period of not less than three years. The fibrosis is not sufficiently strong to permit a reexpansion under that time. Most men prefer to expand the lung somewhere between the third and fifth year.

Sedimentation Test.—I have come to place more and more reliance upon the *blood sedimentation test.* This is, I believe, the most delicate test we have of tuberculous activity. In patients who are up to their normal weight, have no fever, cough, or expectoration, and who feel well and look well, and in whom the physical ex-

(Continued to page 30)

The Treatment of Tuberculosis in the Home*

BY
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A PAPER on this subject can scarcely be expected to offer a great deal that has not already appeared in the literature because, aside from rapid advances in surgical collapse, there has been no recent new treatment advanced for pulmonary tuberculosis. Hygienic treatment is still the chief savior offered the millions suffering from this disease. However, a symposium on tuberculosis would not be complete without a discussion of home treatment, for, after all, the vast majority of these cases must still be treated in the home. Perhaps a review of the situation will stimulate our efforts toward eradication of a disease with the third highest mortality rate in this state.

Let it be understood that I do not believe that home treatment is the ideal treatment for this disease. It is merely a necessary substitute for sanatorium care and no substitute can be as good as the original article. Our economic condition is such that we must be content to care for a contagious disease without adequate isolation because there are insufficient beds in sanatoria or hospitals to provide proper segregation of the open cases. There are many champions of home treatment who contend that patients get well just as readily at home as anywhere, but these men fail to consider the public health menace provided while a great many of these patients are living at home. Can we, as physicians, feel perfectly safe in leaving a patient with open tuberculosis in contact with his family and friends, to a greater or lesser degree, for the necessarily long time required to bring about a cure? I think not.

There are some other disadvantages of home care which do not bear directly on the public health problem, but which should be discussed in passing. Of these

probably the most serious is the distracting influence of the home and family which interferes with proper rest and contentment of the patient. It is extremely difficult for a person to lie contentedly in bed while the rest of his world goes marching on. If he were among a group marching towards the same goal his progress would be more rapid. Furthermore, he would learn from the experience and errors of others. Another disadvantage is that home treatment offers a fertile field for patent medicines, quack cures, diet cures, and other exploitation schemes preying upon the sick. It is also often impossible to provide the correct diet in the home.

The major considerations of home treatment are: (1) Rest regime; (2) diet; (3) adequate methods of segregation; (4) proper environment and accommodations; (5) medical supervision; (6) medication.

Rest.—As Flinn has stated, rest is the only specific treatment for pulmonary tuberculosis (1). In general the more completely a patient rests, mentally and physically, the more quickly will he be cured. A definite schedule must be given the patient. At the beginning of the treatment, even in the incipient case, absolute bed rest with bathroom privileges only should be instituted. This complete bed rest may necessarily be prolonged over a period of months, depending on the progress made. As the symptoms and physical signs improve, concessions are made slowly. The patient is allowed to sit up in a comfortable chair for fifteen minutes once or twice daily, the time to be gradually increased to one hour before the patient is allowed to walk about the house or venture off the porch.

Walking is the severest form of exercise allowed for many months, and it must be very gradually increased, the patient being very careful not to tire himself at

*Reprint from the Texas State Journal of Medicine, October, 1935.

any time. The pulse, temperature, and general reactions must be closely watched during these periods of graduated exercise, and any untoward symptom should be the signal to go backward rather than forward.

During all of these stages a definite rest schedule must be adhered to. A day's routine should run on the following schedule: At 6:45 the patient should arise and drink one or two glasses of water, warm or tap water. He should never be permitted to sleep through breakfast time. Breakfast should be served at 7:30, followed by a quiet hour in bed, with no reading or visitors. Lunch may be served at 12:30, followed by another absolute rest period of at least two hours in length; supper at 6:00, and the patient should retire by 9:00 o'clock.

Visitors should be restricted, particularly in febrile cases, for talking in excess is detrimental exercise. Reading should be moderate and the literature should be of such a nature that mental activity is not greatly increased. The patient should have bed baths if extremely weak or exhibiting a high fever. Baths are weakening to the sick and should be limited to two weekly.

Diet.—It is not sufficient to suggest a well balanced diet, for even with magazine and radio advertising the average person really does not know what makes up a well balanced diet. It is much better to write out a diet, with the patient suggesting foods that he prefers. All food should be prepared as simply as possible and yet be appetizing. Highly seasoned and fried foods are not to be sanctioned. Unless the patient is acutely ill or for any other reason is unable to assimilate a normal meal, it is not advisable to prescribe nourishment between meals. Six to eight glasses of water daily are essential. A quart of milk daily should be taken with meals. Raw eggs should not be a part of the diet. Regular hours for meals should be stressed. It is important that the physician should occasionally check up on the diet and make any changes and suggestions necessary.

Segregation.—At the outset the purpose, importance, and methods of segregation should be thoroughly explained to the patient and to the family, for it is through their co-operation that this program can succeed. The patient must have a room or porch to himself, which is well ventilated but not cold. Children should not be allowed to enter the sick room under any circumstances. All dishes, utensils, and bed clothes must be boiled and kept separate from those used by the rest of the family.

The co-operation of the patient in this program is naturally essential. He must be taught to cover his mouth with tissues when he coughs or sneezes, and to expectorate in tissues or sputum cups. The tissues and cups are to be destroyed by burning daily. If possible he should have a private bath, but if this is impossible, it is up to him to be extremely careful in the common bath—to carefully clean up after himself. The person of average intelligence can learn quickly and is certainly not anxious to spread his disease, but it is necessary that the physician repeatedly remind him not to become negligent.

Environment.—Toomer wisely wrote that: "Few patients possess sufficient self-control and the requisite degree of self-denial to carry out a protracted regime amidst the distracting influence of the home; and few friends possess the judgment to associate with patients who are attempting to carry out such a program and afford them the moral support which is needed (2)." He might well have included the family.

The influence of the family and friends should be of the happy, hopeful type which radiates cheerfulness and confidence, and never shows worry or excitement over the patient's condition. These things must be impressed upon the family. Their co-operation in this connection more frequently than not turns the balance towards recovery. To this end, also, the accommodations of the sick room must be attractive, cheerful, and, of course, clean. It is not necessary to exist in a barren room with four staring walls and a falling ceiling to get

well from tuberculosis.

Medical Supervision.—The average tuberculous individual is emotionally as well as physically sick. Uncertainty and worry are two ills which cause restlessness and discouragement, and they must be allayed before the patient can get the most out of his rest regime. Therefore, aside from the general supervision of the case and the actual treatment, the physician must continually build up the morale of the patient and prevent his becoming discouraged. Cheerfulness and confidence must be the major virtues of the attending physician. After the diagnosis is made he must carefully explain the patient's condition, the requisites of a cure, and the probable outcome. He must explain why it is impossible to predict accurately when the patient will recover and be able to return to a normal plan of living. The family must be taken into the physician's confidence. One cannot be too patient in this important phase of the tuberculosis problem.

After treatment has been instituted the physician should make regular frequent visits to the bedside. Examination should be made at regular intervals and the course of the disease carefully watched. A record of the temperature and pulse should be kept for the physician's examination at each visit.

Medication.—Bed rest is the most important "drug" in this disease. It is both a cough sedative and an antipyretic. Occasionally a mild cough syrup may be necessary, particularly at night. Opiates should be reserved for hemorrhage coughs only. Mild cathartics are sometimes necessary, but mineral oil preparations should not be used. Tonics and digestants have a very important use in many cases. A combination of dilute hydrochloric acid and pepsin taken with meals is frequently beneficial, especially in the markedly debilitated patient.

Intravenous injections of calcium preparations such as calcium cacodylate, calcium gluconate, or calcium chloride, alternating with similar injections of an iron and copper mixture, seem to be of value.

Calcium by mouth may be substituted if preferred. Calcium is particularly indicated in hemorrhage cases.

In the properly selected case, tuberculin is of value, but because it is a two-edged sword its use had better be left to the physician who has had experience with it.

In general, the more closely the regime approximates sanatorium treatment the better the results. Unfortunately this approximation is usually not very close.

Economic Phase.—Before closing may I discuss the economic problem which I believe faces the medical profession regarding this disease? Tuberculosis is costing the public entirely too much in mortality, in time, and in money. The wealthy person is, of course, not a problem. Even people of moderate means are able to enter sanatoria or a rest home for their treatment. But what of the indigent class? County sanatoria and state sanatoria, in most cases, are required by antiquated laws to accept only incipient cases for treatment. The purpose naturally is to take only patients who will be cured in a short time and to prevent the institution from becoming a haven for incurables. However, as a public health measure this method is practically useless. The cough ridden "open case," who is dangerous to his associates, is refused admittance and allowed to spread his disease, although in many instances he could be cured if he could receive hospitalization. The working man faces somewhat the same situation. He cannot afford hospitalization and is not eligible for entrance to municipal institutions because he is not an indigent. Is it any wonder that he wants health insurance? Of all the diseases conducive to State medicine, tuberculosis is probably the greatest, and unless physicians provide much more adequate care and show better results in their combat with this disease we will soon have state medicine. Adequate segregation of at least the open case is the only procedure that will get these results.

Tuberculosis is a socialistic disease, the eradication of which depends upon the

(Continued to page 30)

What is Accomplished in Tuberculosis Among My Own Race Here in Atlanta

THE CURTAIN rises upon scene one of the first act. It is a drama of Negro life. The picture shows one room of a little four-room threadbare cottage on the outskirts of Atlanta. In bed lay a young woman about twenty-five years of age. Her features are sharp and drawn. A pungent aroma of strong deodorant penetrates the heavy atmosphere.

The extreme tranquility is broken every two or three minutes by a paroxysm of coughing, emanating from that frail bit of humanity lying there on the bed. After each cough, which shakes her body convulsively, she expels a mouthful of greenish, thick sputum and then she goes into a sort of tantrum of throat clearing to get out a part which has cleaved to her larynx. The viscid secretions rattled in her chest sounding like what many have called "death rattles."

Her mother, a woman well over sixty, sat in a chair beside the bed. On a small nearby table was an assortment of medicine in bottles of all sizes and descriptions. She was reading from a phamplet given her by the tuberculosis clinic.

"Mother," said her daughter Mary, "Why must I stay here in bed? I feel well enough to get up. I feel that I will lose my strength by staying in bed all of the time."

"It reads here, Mary," said the mother, "to rest as much as you can. Maybe you've been needing a rest for a long time. Now is the time to take it. Stay in bed twenty-four hours every day. Rest, strict rest, is your main hope. Stay in bed until your doctor says you can be up." "Mother," she said, "I do not feel that I will ever be well again. I believe I waited too long before going to the doctor. You remember when I had that side pleuresy in college before graduation year? I can just recall that my roommate kept up a bad cough, and she is now down with tuberculosis. I should have gone to the doctor then

BY

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and had an examination."

The little mother merely raised her head in acknowledgment of this latest

deduction by her daughter. What did she know about scientific diagnosis and modern treatment for T. Bs? She spoke softly "it must be the Lord's will".

Mary was right. The clinic doctor had said her lungs looked on the x-ray picture, as if bits of cotton had been stuffed into them. There were large circles in the tops of both lungs, which looked like huge signet rings. They had recommended that she go to the sanatorium but it takes months to be accepted there. Besides why leave all that is near and dear to one, when near the end?

These wrinkled knuckles were washed bare to send three children to college. One sister dead, another across the hall sick. I glanced about the room at a table laden with school books and up to the walls, where a dozen diplomas or teacher's certificates hung. I thought of the lines "the moving finger writes and having writ moves on". It must have been a reminiscence of my college days—a selection from the Rubaiyat taken from Omar Khyyam. Tragically enough, having witnessed the above spectacle between a loving mother and daughter, I felt dejected.

Faith takes on renewed courage at the humbleness and servility of this Negro mother, in caring for a sick one of her brood. The next Sunday's paper carried her obituary on the last page. "The friends and relatives of Miss X are invited to attend her funeral at Tanner's Chapel." Pastor Brown spoke beautiful words over the inert form, draped beneath a bed of flowers. He said, "it is the will of God."

In this bed to grave episode, I have carried the story further than usual for a point. We who read death statistics are prone to pass over the fact, that so many

Negroes died with tuberculosis, as sort of arithmetical figures rather than to think in terms of human suffering. We can always readily understand when death strikes into our immediate family, then we want to move heaven and earth to right all of the wrongs.

Bear with me a minute while I cite you. Taking 1930 as a sample year: In the city of Atlanta 190 Negroes died from tuberculosis. Since the Negro population of Atlanta is about one-third that of the general population, this means the Negro death rate from tuberculosis was 210.9 per 100,000. Living side by side with white people, we are prone to make comparisons. During this same year 80 white people died from tuberculosis in Atlanta or at the rate of 44.4 per 100,000 population. The colored rate was four times the white rate in this disease.

I shall not burden you with more figures upon this point. Keep in mind, however, that since 1923 when vital statistics became available in Georgia, that the Negro death rate has fluctuated mildly downwards, with an occasional yearly increase, while the white rate has steadily decreased without interruption. The state statistician made an observation that at the present rate of decrease, all factors remaining equal, it would take 100 years for the Negro death rate to fall to the level of the present white rate.

At Battle Hill Sanatorium there are 58 beds available to Negro patients and at Alto there are 85 beds. Comparatively speaking there are 171 beds at Battle Hill, the County Sanatorium, for whites and 300 at Alto, the State Sanatorium. So far as general hospitalization goes, of the 8000 hospital beds in and around Atlanta only 300 are available to Negro patients. Negro doctors may practice medicine and surgery in one private hospital, having a fifteen bed capacity.

The next scene opens in a clinic room of the Atlanta Tuberculosis Association, where rightfully this story begins. There are two patients on the tables, with two pneumothorax machines, being operated by Negro physicians. A third doctor

serves as secretary to record the findings.

Dr. Lang: Why is pneumothorax advised in a great number of cases instead of other methods of collapse therapy?

Dr. Thomas: Artificial pneumothorax has many advantages over other methods. Some of these are: safety, simplicity, control of the collapse, control of hemorrhage. It is a reversible procedure (air can be taken out as well as admitted to the pleural cavity). It can be used in the treatment of early uni-lateral lesions, bilateral partial collapse and can be used in conjunction with surgical procedures.

Dr. Billings: What are some of the contra-indications to its use?

Dr. Thomas: Whereas I do not believe that there are many if any contra-indications to its use in pulmonary tuberculosis, we may encounter several disadvantages such as: incompleteness of collapse due to stiff walled cavities or pleural adhesions, air embolism, shifting of the mediastinum, pulmonary hernia, incidence of tuberculous empyema, inability of the lung to re-expand after pleural thickening and fibrotic contraction.

Dr. Harper: Would you continue a pneumothorax if it failed to close a cavity?

Dr. Thomas: To continue artificial pneumothorax in a patient who has an unsuccessful collapse is to hasten him to his grave. The collapse should be discontinued if phrenectomy used in conjunction with the pneumothorax fails to effect the desired results.

Before a patient is given air treatment, if he has had previous refills, note is made and read aloud of his last manometer readings and the degree of collapse, secured to date, also the amount of air taken each time. After finishing his treatment the patient is led into a dark room and fluoroscoped. I might say before a case is started a conference is held over his x-ray picture to decide which form of compression treatment is suitable for him. This is our pneumothorax clinic.

Downstairs is another examination room where all patients are gone over

and diagnosed or prescribed for according to their indications. A doctor gives skin tests to those who first come in, in order to screen out suspected cases of tuberculosis. His x-ray film is brought in, if he has been recommended for such, and comparisons are made.

In five years 3,218 Negro patients have been examined here and 727 patients have been diagnosed with tuberculosis, 282 or 38 per cent have been sent to sanatoria. In the pneumo clinics 43 Negro patients have received compression treatment. Five Negro physicians report regularly now to do this work which was started in 1932 and for the first ten months of 1935 have held 51 pneumothorax clinics. A fair estimation of results is that about one third have received satisfactory compression (lungs have collapsed the diseased parts or closed cavities) while a third have been partially benefited. Still another third are in the unfavorable class. This clinic is operated on an ambulatory basis and selections are not made of ideal cases alone, but rather, if we think we can give assistance at all. Three cases have been sent to Grady hospital for phrenic nerve operations.

Outside of the clinic, in private practice we have carried on compression treatment in 15 patients, with about the same comparative results shown in the clinic. These patients are also treated on an ambulatory basis. I recall one patient who has a successful collapse and who has never stopped doing janitorial work except for a few days, when the first treatments were made. Some of these patients start off paying for their treatments but eventually we have to send most of them into the clinic or to sanatoria. We have only hoped to bridge in the time between diagnosis and the time for sanatorium admission but due to the slow sanatorium turnover, I suspect we shall have them permanently on our hands, unless additional accommodations are set up in the State Sanatoria.

We are doing educational work by giving lectures and illustrations before clubs and schools. We contribute regularly an

article to the Negro press, written in the language of the laity, on tuberculosis and its prevalence. Spurred on by an offer of the National Tuberculosis Association, to give free purified protein derivative for skin testing Negro college students, one of our doctors has skin tested the students at Morris Brown University.

We have assisted the FERA in its examination of at least 20,000 Negro women to determine eligibility for employment, as well as to skin test 50 children in the government nursery schools. We found some active cases of tuberculosis and many suspects, who were directed to the chest clinic at Grady or to the A.T.A. for substantiation of diagnosis.

I believe that this contribution of the Negro doctors will help towards lowering the death rate in 1935 from tuberculosis in Atlanta among Negroes. Our only hope is that we might be able to enlarge our program, realizing that in a large city there can be no effective control over such a scattered group of sick persons. The greatest factors we have to depend upon is the skill of the doctors and the accessibility of the patient to the clinic.

We recommend for improvement in 1936 the following items:

The addition of 100 beds for colored cases to Battle Hill and to Alto.

The erection of custodial institutions to take care of the hopelessly sick patients from all diseases.

The immediate opening of the children's ward at Battle Hill which has already been built and equipped.

That there be provided a place for Negro physicians to do chest surgery either at Battle Hill or the City Hospital.

To not only facilitate the training of Negro doctors and nurses in the City and County or State institutions but arrange for the appointment of the best suited of these professional people, to appointments as public health officers. In this respect they might give the advantage of their training to the masses of Negroes with mutual benefit of both citizens and the doctors in mind.

The Importance of Mouth Hygiene in the Treatment of Diseases of the Chest

THE ORAL cavity being the port of entry for all food used by the human body, and with most bacteria that enter the body through this channel, it becomes an important factor to give some heed to the importance of mouth hygiene in the treatment of disease and particularly those diseases that have to do with the respiratory tract.

The original theory that infection was supposed to extend directly from the teeth to the source of infection, by means of aspiration and gravity, has been placed in a secondary role and now it is conceded that the infection in most cases is carried to different parts of the body by circulation, particularly the lymphatics. In my opinion, both of these theories are equally important, although it is proven that most diseases caused by infection are carried through the blood stream.

Food taken into the body through the mouth is mixed with saliva, which carries with it any bacteria that maybe in the mouth at the time. It is well known that the mouth is filled with bacteria almost from the minute of birth. Most of these bacteria are harmless and many of them are necessary and beneficial; but bacteria like Vincent's spirilla and the tubercle bacillus are pathogenic and if prevalent in any large amounts do untold damage to the body.

A patient suffering from tuberculosis or any other chest condition, or disease of the respiratory tract, with which we are at present concerned, has enough to fight off this condition without added load swallowing of virulent bacteria with every mouthful of food; or having them absorbed through the lymphatics and carried to the affected parts. We could go on to show how these bacteria cause many of the infectious diseases of the body, but in this paper we will limit the subject

BY

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to the chest and respiratory tract.

The toxic symptoms of oral infections are so similar to those of tuberculosis, that they are often interpreted as due to tuberculosis among the tuberculous. This is because the clinical manifestations are not easily distinguished from the clinical symptoms of tuberculosis.

In the diagnosis of pulmonary disease, lesions of the upper respiratory tract, particularly those associated with "Dead Teeth" should be kept in mind. Interthoracic disease secondary to perio-dental infection may closely simulate pulmonary tuberculosis. Recognition of lung abscess consequent to dental caries and adequate treatment thereof, yield highly favorable results.

In the matter of diagnosis, one must be very careful and sure of their findings. At autopsy, it is reported that many cases of pulmonary disease associated with dental lesions, are often missed clinically and are frequently passed on as tuberculosis. Possibly, many of these cases could have been cured had an early, accurate diagnosis been made. This should encourage a closer relationship between internist and dentist for the benefit of the patient, especially in the treatment of tuberculosis; as most patients with pulmonary disease, which may have its origin in the oral cavity, seldom go to the dentist first.

The unfavorable conditions of the mouth making a ripe field for the invasion of bacteria, and causing them to enter the chest or respiratory tract, either by direct aspiration or through the blood stream are as follows:

1. Pyorrhea Alveolaris and trench mouth.
2. Fillings with poor or rough margins.
3. Irritating dentures and bridges.
4. Cavities and rough edges of teeth.

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5. Loss of teeth causing recession of gum tissue around necks of teeth adjacent to teeth extracted.

6. Lack of chewing properly because of lost teeth.

7. Abscessed teeth and any special infection.

It would be too lengthy to explain each of these causes in detail, but suffice it to say that any of these causes makes for an unclean mouth; with pockets filled with bacteria and which in time get into the respiratory system and lungs. To prove this point, it is shown that in hospitals where mouth prophylaxis is practised before major operations, requiring the use of a general anesthetic; the percentage of pneumonia after anesthesia is greatly reduced and in some hospitals almost negligible. This procedure is practised at the Mayo Clinic with the most favorable results. In time, this will become a routine procedure except in cases of emergency operations. Most Class A. Dental Schools require hospital internship before graduation which will in time lead to this practice of mouth prophylaxis before anesthesia and hence, greatly reduce pneumonia after anesthesia. It is easy to understand that bacteria can be drawn into the chest and respiratory tract during general anesthesia of long duration.

In a survey of institutions treating respiratory diseases, seven hundred patients are cared for by a visiting dentist. He reports, "when patients enter the institution, almost all of them are dental 'cripples,' most of them suffering from

pyorrhea and trench mouth. "Out of one hundred and sixty four patients examined at one institution, thirty five or twenty percent had trench mouth." After a general prophylaxis, with the extracton of the very bad teeth and with instructions as to the care of their teeth, these patients showed immediate improvement in their general condition.

Seventy nine percent of the American people do not see a dentist at any time. Of the remaining twenty one percent, a large proportion do not see a dentist except in cases of emergency (a tooth-ache, which is generally followed by extraction).

The proportion of people who see their dentist twice a year and brush their teeth twice a day, is still very small; which should put the physician on his guard in treating some of the diseases we have mentioned.

Summary

1. A closer relationship between physician and dentist is necessary for an early, accurate diagnosis.
2. Bronchitis, asthma, trachial stenosis, embolic pneumonia, fusiform and spinallary of the lung; tuberculosis, tonsilitis and laryngitis may have a direct relationship to dental sepsis.
3. X-ray of the oral cavity, the elimination of all dead teeth and all signs of infection is advised as soon as practical.
4. A thorough prophylaxis is very necessary as soon as possible.
5. The co-operation of the patient in the matter of dental hygiene cannot be stressed too strongly.

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Tuberculosis of the Trachea as A Cause of Death

IN REPORTING deaths as due to tuberculosis reference is rarely, if ever, made to involvement of the trachea as being the immediate cause; therefore, just how often this complication is so responsible, we have no way of knowing. I have observed quite a number of such deaths, upon some of whom an autopsy has been obtained.

At autopsy on our tuberculous patients, unless a special request is made, the trachea is not usually investigated; and, even though this complication is found, the pathologist, aware or not of the clinical symptoms which preceded death, would hardly make note of it as being the immediate cause of death.

These cases usually have some involvement in the larynx; but, in the cases I have seen, this has been comparatively small and would not lead you to suspect trouble below.

The diagnosis is certainly not often made during routine examinations of head and throat. Bronchoscopic examination is not, of course, indicated in all our tuberculous patients, but there are many in whom it is not only permissible, but advisable.

Should the laryngologist, at his usual examination of the larynx made by the indirect method, find a case showing heavy viscid secretions clinging to the walls below the cords, he should advise such an examination.

Probably long before such a discovery, the medical man in charge should have been suspicious of this complication on account of wheezy respiration, both inspiratory and expiratory, and more or less continuous; of mild or severe attacks of dyspnoea relieved only by the raising, after much physical effort, of heavy, tenacious secretions; and should have requested this examination. These cases die of suffocation as a result of their inability to expel the secretions which form in, and cling to, the diseased portions of the trachea—plus

that which usually must be raised from the lungs—and it is not pleasant to witness such a death.

The diagnosis of tracheal involvement is too rarely made, or even suspected, and the patient dies and is buried with the simple diagnosis—"Tuberculosis of the lungs"; with, probably, "Tuberculosis of the larynx" as a contributing cause.

Because of our hesitancy in using the bronchoscope, when a diagnosis of this complication is made, it is made too late to be of any help in our management of the case.

The question might be asked, "What can be done for these cases, perchance discovered fairly early?"

For such a question I may not have a ready response. However, I would have the satisfaction of making the diagnosis; I would do something, rather than nothing; I would not simply treat these cases as "Asthmatics".

I would know the cause and location of the construction to breathing, and I would eliminate, or discover, other causes than Tuberculosis, be they simple or malignant.

I might also, locate the cause of obscure hemoptysis, and I would be prepared to act promptly whenever distressing symptoms should arise.

By discovery of this complication I would prevent a patient, who might otherwise be considered a suitable one, from being exposed to a thoracoplastic operation; thereby protecting patient and surgeon from taking an unnecessary and hopeless risk.

In the cases that have come to autopsy the involvement, and extension, seemed to be from below upward.

In one case there was found a general infiltration and thickening, rather evenly distributed, of the entire lower two-thirds of the tracheal wall and upper portion of left main bronchus, with only superficial ulcerations; the calibre of the trachea being reduced to the size of a lead pencil.

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A suppurative mediastinal gland had been suspected in this case, but was not found. She had been ill only five or six months, and her lung condition was not extensive.

The first symptoms of disease in this patient were those of a laryngitis. This case may serve as an example of an acutely progressive one.

In another case, an entirely different condition was found. This patient had far-advanced disease in her right lung, with only slight involvement in her left; her right kidney had been removed and she had a right phrenectomy. In her case the calibre of the trachea was not as greatly reduced; but there was much deformity from old, extensive sluggish and weeping ulcerations.

This patient suffocated on account of

not being able to raise her own secretions, without having developed trouble in the lungs due to obstruction.

Her larynx showed an old inactive involvement, but there was no edema.

Dr. Chevalier Jackson, I believe, is given credit for expressing the very important truth—"All is not asthma that wheezes".

In our cases of Tuberculosis showing symptoms of obstruction to breathing which cannot be accounted for in the lungs, as in those with some atelectasis or bronchiectasis, or other conditions favoring stagnation or secretions, we should always bear in mind the possibility of a tracheal involvement, and should not hesitate to use the bronchoscope.

The fact that there is some involvement in the larynx should not deter us, if more important contra-indications are not also present.

When obstruction to breathing is in the larynx, there is always present a pathognomonic sign—supra-sternal retraction, which is noticeable by its absence in these cases.

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ABSTRACTS

SIMONS, DEWIN J. and SIMONS, JOHN B.
Problems of the General Practitioner in Tuberculosis. American Review of Tuberculosis, 30: 593-598 (Nov.) 1934.

Since December 17, 1929, 30 cases of pulmonary tuberculosis have been encountered in a general practice centered about Swainville, Morrison County, Minnesota. Eighteen of these were discovered in the routine of practice; 12, through efforts to trace the others epidemiologically. Various questions have arisen in this work, which are believed to be not peculiar to any one practice but to typify the difficulties of tuberculosis work in all general practices. The purpose of this paper is to discuss these problems in the hope that their elucidation will assist in the fight against the disease in rural districts.

Both the diagnosis and the treatment of the malady are fraught with obstacles and pitfalls for the rural physician. Diagnostic difficulties are undoubtedly of first importance. These may be divided into the problems presented by the atypical individual case and those concerned with the epidemiology of the affliction. Questions of correct therapeusis for rural patients also must be given attention if the disease is to be adequately controlled.

Attention was first directed to the problem of diagnosis of tuberculosis by successive epidemics of measles and pertussis and the subsequent death of two patients from tuberculosis meningitis. It became apparent that even the most detailed history and careful physical examination would not disclose every case of tuberculosis. In addition, repeated sputum examinations were made, basal-metabolism tests were performed when needed and a daily temperature record with thermometer readings taken four times a day over a 10 to 14-day period was required.

However, it was not until the Mantoux and Pirquet tests were added to the diagnostic regimen that actual progress became noticeable. Each patient reacting positively to tuberculin has been subjected to roentgenographic study. All x-ray

plates have been interpreted by either a roentgenologist or someone specializing in tuberculosis. These two phases of the diagnostic scheme have furnished a solution for the problems presented by the individual atypical cases. Until the adoption of the use of tuberculin in diagnosis a sense of insecurity and inadequacy was unavoidable. After tuberculin was added to the diagnostic armamentarium many of the questionable cases were found unmistakably to be one form or another of tuberculosis. More general use of the tuberculin tests by general and rural practitioners will go far in solving diagnostic difficulties in rural districts.

In general practice outside the cities the epidemiology of tuberculosis constitutes a real problem, the solution of which is dependent upon the interest and cooperation of the rural physician. Here again tuberculin tests offer the first means of approach. Whenever an individual is found to be tuberculous through use of the diagnostic schedule previously given, every member of the patient's family is tested with tuberculin. After this is done other contacts from whom the patient may have become infected or to whom it may have been spread are tested. The family's milk supply is, when necessary and possible, subjected to tuberculin tests. Other possible sources of infection or channels of dissemination are also investigated. Thus, then, tuberculin-testing provides the first means of epidemiologic diagnosis.

Although tuberculin is indispensable to the unfailing diagnosis of tuberculosis in rural districts, its use introduces one of the greatest dangers in recognition of the disease. This is involved in the interpretation of the roentgenogram. It is felt that only those general practitioners who have had special training in tuberculosis or in roentgenology should pass final judgment on films of persons suspected of the disease.

It is at this juncture that the rural physician encounters one of his great difficul-

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ties in connection with the problem. The patient is reluctant to incur the expense of the Mantoux test and x-ray study, and when the doctor mentions the additional fee for interpretation, the patient often refuses to let the film be taken and also assumes that the local physician is culpably ignorant. This problem could be solved by the designation of some individual or institution by whom or where accurate interpretation of thoracic film of tuberculosis suspects could be obtained without cost to the patient or rural practitioner. Since this would overcome one of the principal obstacles in correct diagnosis of tuberculosis in rural patients, the expense would be justified eventually by the advancement of the anti-tuberculosis campaign which it would aid.

Therapeutic difficulties are less clearly

defined. Still, proper management of cases found in rural practice would unquestionably reduce both the incidence of, and mortality from the disease. The care of the tuberculous patient in the rural home holds forth little promise of desirable results. This is not due to the treatment advised but to the treatment actually followed by the patient. Minor variations in one phase or another could possibly be well borne, but each deviation soon leads to other concessions until the ultimate home treatment amounts to no treatment at all.

Solution of the financial problems depends, of course, upon either provision of sanatoria in each county or the gradual education of the public to the necessity for this form of treatment so that permission can be obtained for such care in all cases.

CASE REPORTS*

ASPERGILLOSIS

By W. Rufus Smith, M.D., Knoxville, Tenn.

Mr. S., age 45, weight 133, general appearance fair. In May, 1933, he developed a slight cough, bringing up a lump of expectoration every morning about the size of an average marble. This sputum was very tenacious and was dotted with black specks. He had some dyspnea, appetite was fair, no energy, and was losing weight. He had had a few mild night sweats at the onset.

Past history of influenza in 1919 or 1920, with a very slow recovery. No other diseases of importance.

Physical examination of all systems were negative except the chest. On the right side there was diminished expansion and slight impairment of resonance over entire chest. Breath sounds were harsh, and there were occasional dry rales in right apex. Breath sounds were markedly diminished, and a very few distant moist rales in the right base. Left chest revealed no abnormal findings.

Blood and urine revealed nothing abnormal. Six sputum examinations were negative for tubercle bacilli, but one or

two revealed some abnormal cells, which I took to be some form of fungus cells. After several cultures of sputum were made, a pure growth of *aspergillus fumigatus* was obtained.

X-ray of chest revealed small amount of fibrosis in right apex. There was considerable fibrosis with a round, infiltrated area about three inches in diameter in the right base.

Of all the literature I have been able to review, it seems that everyone is agreed on the iodides in one form or another, given orally or intravenously, and to be given in large daily doses. This is not specific, though it does cause marked improvement in some cases.

In discussing this case, one can readily see how easily a diagnosis of tuberculosis could have been made on the history, physical findings, and the x-ray findings. I placed this patient on the same routine as used in the treatment of tuberculosis, and gave him 45 grains of potassium iodide orally, 15 grains three times daily. Up to the present time, the patient has shown remarkable improvement in every way, being entirely free of symptoms with little or no physical findings.

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MODERN METHODS OF DIAGNOSIS AND TREATMENT (Continued from page 13)

amination and x-ray is not much help because of the collapsed lung, the blood sedimentation test gives us a very accurate indication of the healing process. The test is very simple and consists of reading the sedimentation of a column of citrated blood in millimeters of one hour.

This brief resume of some of the modern methods in Tuberculosis, shows, I think, that the diagnosis and treatment has advanced rapidly in the last few years. The newer procedure in treatment may in

all fairness be compared to the discovery of Insulin for Diabetes and liver extract for Primary Anaemia. The public is beginning to realize the value of these measures. The treatment of our Tuberculous patient is not the simple matter it was ten or fifteen years ago when it was just a case of putting him to bed and keeping him there. We must always consider our tuberculous patients carefully as a possible candidate for one of these newer methods of treatment.

THE TREATMENT OF TUBERCULOSIS IN THE HOME (Continued from page 16)

combined efforts of organized medicine, the public health service, and the government. Educational programs sponsored by these agencies have served, and will continue to serve, a great purpose, but they have accomplished nearly as much as is possible in most states. The only logical course to take in the future is to provide means for the scientific segregation and treatment of every patient suffering from this disease. If such segregation were made compulsory as in other contagious and infectious diseases, and could be maintained through one generation, the tuberculosis problem would resolve itself into

no problem at all. Shall organized medicine perfect a plan or shall we let the government do it?

SUMMARY

1. Home treatment is merely a substitute for sanatorium treatment, made necessary by economic conditions.
2. The disadvantages of treatment in the home are pointed out.
3. A suggested regime for home care is given.

REFERENCES

1. Fliin, John W.: The Specific Treatment of Pulmonary Tuberculosis, *Southwestern Med.* 15:299-300 (July) 1931.
2. Toomer, W. A.: Home Treatment of Tuberculosis, *New Orleans M. & S. J.* 84:357-362 (Nov.) 1931.

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